



October 14, 2005

Commissioner John L. Geesman
Commissioner James D. Boyd
California Energy Commission
1516 Ninth Street, MS-4
Sacramento CA 95814-5512

DOCKET	
04-IEP-1 K	
DATE	OCT 14 2005
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**Re: Comments on Building Integrated PV and Distributed Renewable Energy
(CEC Docket No 04-IEP 1K Committee Draft Document Hearings)**

Dear Commissioners:

Solar Integrates Technologies (Solar Integrated) wishes to compliment the California Energy Commission (CEC) on its 2005 Integrated Energy Policy Report (2005 IEPR), providing vision toward long-term sustainable energy development in the State of California. Solar Integrated is a California based company that designs, manufactures and installs proprietary building integrated photovoltaic (PV) systems for commercial, industrial and mobile applications worldwide. Pursuant to the public hearing held by the CEC on October 6, 2005 regarding the 2005 IEPR, Solar Integrated respectively submits the following comments related to Solar PV and Distributed Renewable Resources.

PEAKING RESOURCE ATTRIBUTES OF SOLAR PV

From a resource planning perspective, Solar PV should be differentiated from other renewable energy resources in that capacity associated with Solar PV can be considered dependable during peak hours of the summer peak season.

Building integrated PV on the roofs of commercial buildings provide a significant opportunity for renewable energy in California. Commercial roof space in California is estimated to be 3.6 billion square feet.¹ Building integrated PV on commercial roofs using thin-film PV technology has potential to generate over 14,000 MW in California. Assuming an 18% capacity factor, building integrated PV on California commercial roofs has the potential to generate over 22,000 GWh per year of renewable energy.

Renewable energy from building integrated PV reduces natural gas consumption otherwise required for peaking generation resources. 22,000 GWh of renewable energy referenced above has potential to displace over 200 billion cubic feet of natural gas per year². Building integrated PV is an emissions free renewable resource. Displacing 22,000 GWh of natural gas peaking generation has potential to eliminate over 3.7 million pounds of NOx and over 1.3 million pounds of particulate matter emissions per year.²

1. "PV Grid Connected Market Potential in 2010 Under a Cost Breakthrough Scenario"
Navigant Consulting, The Energy Foundation, Clean Energy Research. September 2004
2. Peaking resource assumed to be GE LM6000 gas turbines with assumed heat rate of 9,400 BTU/kWh (HHV) and 0.169 lb/MWh NOx emissions based on natural gas fuel with Dry Low NOx combustors and 80 % effective SCR. PM emissions are assumed to be 0.0066 lb/MMBTU (HHV) natural gas fuel based on EPA AP 49 publication

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DISTRIBUTED RENEWABLE ENERGY

Building integrated PV on commercial roofs provide renewable energy based distributed generation, effectively resulting in end-use demand reduction and reduced need to dispatch natural gas fired generation. Like other forms of distributed generation, distributed renewable energy increases reliability at the customer point of load and contributes to overall system diversity. Differentiated from remote centralized forms of renewable energy, building integrated PV delivers energy at the point of end-use, reducing overall utility transmission and distribution losses. This reduction in transmission and distribution losses further increases natural gas savings and associated emissions reductions.

CONSUMER "VALUE ADDED" FROM BUILDING INTEGRATED PV

Building integrated PV provides California electric consumers with non-energy economic benefits similar to the way cogeneration provides non-electric benefits in the form of useful thermal energy avoided cost. With building integrated PV, California consumers have an opportunity to capture the co-economics of an integrated roofing and renewable energy application. Roof "avoided cost" effectively reduces the cost of a PV installation, thereby lowering cost of associated renewable energy.

We look forward to further development of building integrated PV distributed renewable energy resources as contribution to California's Renewable Portfolio Standards.



Jon W. Slangerup
Chief Executive Officer
Solar Integrated Technologies

cc: California Energy Commission Dockets Unit, Docket No. 04-IEP 1K

